

# INDOOR AIR QUALITY (IAQ) PROGRAM UPDATES FOR:

## West Leyden High School

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North Lake, Illinois 60164



*Prepared for:*

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**INDOOR AIR QUALITY (IAQ) PROGRAM REPORT  
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## EXECUTIVE SUMMARY

J.S. Held, LLC has drafted this Indoor Air Quality (IAQ) Program Report for West Leyden High School as a tool to better prepare the school district to effectively handle and openly communicate IAQ concerns. This program is intended to provide the school district with a historical “baseline” of potential IAQ issues in order to develop a preventative approach to minimizing the impact of future IAQ concerns. This program, followed by the annual maintenance program, will assist West Leyden High School in providing a higher quality indoor learning environment and workplace.

J.S. Held has completed the integral components of this program including:

- Interviews with school administrators and other key personnel to identify the extent, if any, of past/present IAQ concerns, complaints, and maintenance issues.
- General conformance to several government recommended IAQ Programs. These programs include the **United States Environmental Protection Agency (USEPA) Indoor Air Quality Tools for Schools Program**, the **USEPA Guidelines for Managing Environmental Issues within Schools**, and previously proposed legislation within the State of Illinois.
- Site inspections and assessment by trained and experienced personnel. Items investigated during the facility inspection process include general visual observations, Heating, Ventilation and Air Conditioning (HVAC) systems, facility design, maintenance upkeep and other related concerns. In addition, the USEPA Tools for Schools Program has developed recommended inspection checklists which were completed as part of the inspection process.
- Environmental monitoring of general building conditions through the use of specialized instrumentation. Environmental parameters monitored during the site visit consist of temperature, relative humidity, carbon dioxide, carbon monoxide, air velocity and ventilation. Results of monitoring were compared to generally accepted guidelines for each environmental parameter.

**Having completed the above referenced scope of work, J.S. Held has not identified any major IAQ concerns currently facing the school district.** Although not a serious concern at this point, J.S. Held recommends the district and J.S. Held continue to monitor the slightly elevated levels of carbon dioxide and relative humidity reported within the school. The HVAC systems and filters should be maintained on a routine basis. This program is designed to monitor and maintain current work practices to prevent future concerns. J.S. Held will continue to monitor IAQ conditions as part of the school district’s IAQ program.

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# SECTION 1 INTRODUCTION

## 1.1 The IAQ Program

In conjunction with Illinois school administrators, United States Environmental Protection Agency (USEPA) guidance documents and numerous environmental professionals, J.S. Held, LLC has developed this IAQ Program designed to assist schools in the identification and control of potentially harmful environmental hazards. Studies have consistently demonstrated that clean, quiet, safe, comfortable, and healthy environments are an important component of successful teaching and learning.

By minimizing the “unknowns” associated with facility conditions, our program empowers risk managers and school administrators to make informed decisions and implement solutions on environmental issues based on data and science rather than hype, fear, and misinformation.

### Background on IAQ Concerns

According to the United States General Accounting Office, approximately fifteen thousand school facilities suffer from negative indoor air quality factors affecting more than eight million children and other building occupants (General Accounting Office 1995). United States Environmental Protection Agency (USEPA) studies routinely identified the following symptoms – irritated eyes, nose and throat, upper respiratory infections, nausea, dizziness, headaches, fatigue, or sleepiness. Collectively, these symptoms have been referred to as “Sick Building Syndrome (SBS).”

In response to IAQ and SBS concerns, the USEPA has issued guidance documents designed to educate school administrators on potential environmental hazards within the school setting. Specifically, environmental parameters identified in USEPA guidance documents include:

- Asbestos
- Lead
- Radon
- Mold

In addition, USEPA has also developed the “IAQ Tools for Schools” program ([www.epa.gov/iaq/](http://www.epa.gov/iaq/)) designed to assist school administrators in the identification and control of environmental hazards.

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## Linking IAQ Conditions to Performance

As more research has been conducted on the subject, the majority of studies generally suggest that poor indoor air quality makes teachers and students sick which in turn effects performance (EPA 2000, Kennedy 2001, Leach 1997). Most studies suggest there is a positive link between poor IAQ conditions and absenteeism (Smedje and Norback 1999). In addition, the American Lung Association reported that American children miss more than ten million school days each year because of asthma exacerbated by poor IAQ conditions (ALA 2002, EPA 2000).

## IAQ Baseline Program

This Baseline Program has been developed through consultation with school administrators, facility personnel and a variety of governmental organizations. JS Held has utilized our team's experience and technical capabilities to create a Baseline Program that pulls together and collectively addresses many of the critical elements identified by USEPA through their guidance documents and the "IAQ Tools for Schools" program.

The objective of our Baseline Program is to gain a general and working understanding of environmental conditions at each facility through a combination of visual observation, as well as environmental monitoring for specific parameters. Upon completion, thorough record keeping documents are generated to be used as an effective risk management tool.

Following is a brief overview of the key elements included in J.S. Held's Baseline Program:

- ✓ Interviews with school administrators and other key personnel attempting to identify the extent, if any, of past and current IAQ issues, complaints, or maintenance problems. Interview of building occupants reporting potential IAQ problems (if necessary).
- ✓ Visual observation by our inspection team focused on general building conditions, Heating, Ventilation and Air Conditioning (HVAC) systems, design issues, maintenance problems and other related concerns.
- ✓ Environmental monitoring of general building conditions to include temperature, relative humidity, carbon dioxide, carbon monoxide and ventilation.
- ✓ Limited testing of drinking water for lead content.
- ✓ Installation of carbon monoxide detectors.
- ✓ A written Management Plan designed to document and maintain critical elements of the program including preventative maintenance activities and ongoing monitoring.

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## IAQ Monitoring Program

Following the completion of our Baseline Program, JS Held has developed an annual monitoring program to assist school administrators and facility personnel with maintaining our IAQ program.

This program includes:

- ✓ Semi-annual site visits and re-evaluation by the inspection team.
- ✓ Follow-up and documentation of occupant complaints or concerns.
- ✓ Environmental monitoring for temperature, relative humidity, carbon dioxide, carbon monoxide and ventilation.
- ✓ Completion of forms and maintenance of school records within the school facility's IAQ Management Plan.

### **1.1.1 The USEPA Tools for Schools Kit**

According to the USEPA, “the goal of this kit is to provide clear and easily applied guidance that will help prevent indoor air quality (IAQ) problems and resolve such problems promptly if they do arise.” The USEPA created this kit in conjunction with assistance and endorsement from the American Federation of Teachers, Association of School Business Officials, Council for American Private Education, National Education Association, National Parent Teachers Association and the American Lung Association. Following the spirit of this program, JS Held has implemented the basic components of this kit, along with additional inspection and monitoring services to better serve West Leyden High School.



**USEPA IAQ TOOLS PROGRAM**

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As part of this IAQ program, J.S. Held personnel will act as the IAQ Coordinator as defined in the Tools for Schools Kit. J.S. Held personnel have completed the checklists located within the kit during our initial site visit with the assistance of school personnel. J.S. Held will continue to complete the checklists during our routine site visits as part of our annual maintenance program. During this process, it may be necessary to meet with administration officials, maintenance and custodial staff, school medical provider, teachers and food service professionals to accurately complete the inspection checklists.

### **1.1.2 Field Investigation / Monitoring**

J.S. Held has performed the field investigation checklists located within the Tools for Schools Kit. The site visit included an investigation of classrooms, cafeteria, storage closets, mechanical rooms and the exterior of the structure. The inspection team spent considerable resources attempting to identify odors, water damage/intrusion, moisture, ventilation and other potential hazards.

While conducting the site visit, J.S. Held personnel completed the following checklists from the Tools for Schools Kit:

- ◆ Administrative Staff Checklist
- ◆ Buildings and Grounds Maintenance Checklist
- ◆ Food Service Checklist
- ◆ Health Officer/School Nurse Checklist
- ◆ Integrated Pest Management Checklist
- ◆ Renovation and Repair Checklist
- ◆ School Official's Checklist
- ◆ Teacher's Classroom Checklist
- ◆ Ventilation Checklist
- ◆ Walkthrough Inspection Checklist
- ◆ Waste Management Checklist

Completed checklists can be found in Appendix A of this report.

During the site visit, the investigation team utilized several IAQ instruments to evaluate ambient indoor conditions. Monitoring was performed immediately after the release of school allowing for the most accurate readings without interrupting the learning process. The team used a IAQ-Calc Indoor Air Quality Meter ® to measure temperature, relative humidity, carbon monoxide and carbon dioxide levels. This instrument is designed for ambient indoor air monitoring conditions. Monitoring results are identified in Section 2.3 for comparison to generally accepted levels provided by the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) and the USEPA.

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## SECTION 2 SITE VISIT

### 2.1 Summary of Previous Indoor Air Quality Activities

Mr. Randy Olinksi, Director of facilities at West Leyden High School, discussed with J.S. Held previous IAQ concerns at the facility. Following is a summary of previous IAQ concerns:

- Current district staff do not have a record of any previously documented cases of Indoor Air Quality complaints or issues at West Leyden High School.

### 2.2 Summary of Visual Inspections

J.S. Held personnel, Mr. Harper Burkeen and Mr. Devon Rathbun performed the site visit during the period of April 29<sup>th</sup>-30<sup>th</sup>, 2024. During the site visit, J.S. Held personnel completed the following checklist from the Tools for Schools Kit:

#### ◆ Administrative Staff Checklist

Completed checklist can be found in Appendix A of this report.

#### HVAC System observations

During the site visit, J.S. Held personnel conducted random visual observations of accessible areas of the HVAC systems on the building. The HVAC units all appear to be operating properly. No excess moisture was observed in or around the units at the time of the site visit. Some HVAC units appeared to have visible signs of minor dust and debris on the filters. J.S. Held recommends these filters be replaced. Filters should be changed on a regular basis in accordance with the districts and manufacturer's recommendations.

#### Local Exhaust Fans

The local exhaust fans throughout the building observed were covered with minor visible dust and debris and needs to be incorporated into the routine maintenance and cleaning program.



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## Moisture Intrusion

J.S. Held personnel observed moisture intrusions/damage within several areas throughout the school building.

Moisture damaged ceiling tiles were found in the following areas:

<i>Room Identification</i>	<i>Visual Water Intrusion Observations</i>
Room 264	Water Damaged Ceiling Tiles (2)
Room 265	Water Damaged Ceiling Tiles (3)
Room 263	Water Damaged Ceiling Tiles (1)

All water damage and staining observed during the site visit was minimal and would not be expected to generate significant health hazard for building occupants. However, excessive moisture is one of the key ingredients for microbial growth and therefore should be monitored in order to prevent future microbial problems. J.S. Held recommends the cleaning or replacement of water-stained ceiling tiles and the restoration or replacement of wet ceiling tiles in an efficient manner.

## Other Notes

- J.S. Held personnel observed scented candles, heated wax, air fresheners, etc. within several areas of the school that may produce unwanted odors that could be an issue for some of the staff and students.
- J.S. Held personal observed live plants throughout multiple areas of the school at the time of the visit.
- J.S. Held personal observed signs of live animals in room 232 (Lizard), as well as aquariums in rooms 142 and 144 at the time of the visit.
- Live plants were observed in the following rooms: Room 168-4 (11), Room 169-9 (1), Room 169-4 (1), Room 169-2 (6), Room 140 (1), Room 144 (15), Room 145 (7), Room 110 (2), Room 106 (5), Room 222 (2), Room 222-5 (5), Room 210 (1), Room 212 (7), Room 213 (5), Room 202 (3).
- Microwaves, refrigerators, food, and a coffee maker were found in numerous areas at the time of the site visit. Microwaves should be monitored for proper use and clean-up as not to allow food and food remnants to remain that may attract unwanted odors and or pests. Also, cooking with microwaves and coffee makers within these areas may allow unpleasant odors to some occupants that could cause potential indoor air quality complaints. Food items, if not properly stored and cleaned up have the ability to provide unwanted odors and attract pests into the building. Food within these classrooms and others should be monitored by staff to ensure packaging is sealed and remnants are cleaned up properly and disposed of.

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SDS sheets should be maintained on-site for all chemicals including air freshening devices. J.S. Held recommends the district implement a Hazard Communication program for the employees regarding the utilization and storage of chemicals within the building and train specific employees on these chemicals, the SDS sheets for these chemicals, proper storage and access to these chemicals.

Monitor animal habitats and aquariums for cleanliness and proper maintenance. J.S. Held recommends a routine maintenance/cleaning schedule be developed and maintained by the district for these items. Furthermore, notification to occupants within these areas regarding the animal habitats should be developed to ensure no allergies may be agitated from these animals/fish.

Monitor the plant life within the school and try to determine if any occupants of the building have predispositions to the plant life within the building prior to subjecting those individuals to the situation with the plants.

J.S. Held recommends monitoring the plants, watering of plants, food storage, coffee makers, mini-fridges, microwaves, candles, etc. that may produce unnecessary odors or contaminants that may be offensive or cause reactions in some personnel. These items along with others such as cleaning supplies, air fresheners, etc. can contribute to indoor air quality complaints and concerns.

The refrigerators within these areas should be monitored by maintenance and administrative personnel to ensure these areas are clean and the refrigerators are operating properly. Spoiled food or food particles from these areas may attract unwanted odors that may cause irritation to occupants, as well, these food items may attract pests if not properly cleaned and housekeeping kept up within these areas. The proper operation of the refrigerators is necessary to keep down on unwanted moisture intrusions within the areas of the refrigerators that could promote microbial growth within the area.

## **IAQ Monitoring Results**

J.S. Held utilized the IAQ-Calc Indoor Air Quality Meter® to measure temperature, relative humidity, carbon dioxide and carbon monoxide throughout the facility. The following is a brief narrative explaining the usefulness of testing for these parameters as well as the results of our testing.

### Carbon Dioxide (CO<sub>2</sub>)

Building occupants exhale carbon dioxide throughout the course of daily activities. Throughout the day, CO<sub>2</sub> levels will begin to rise. Concentration levels exceeding 1,000 parts per million (ppm) are not uncommon particularly in more energy efficient facilities. It has been suggested by the USEPA that the buildup of CO<sub>2</sub> levels parallel that of other contaminants of greater concern such as carbon monoxide, hydrocarbon vapors, aerosols, tobacco smoke, micro-organisms, and volatile organic compounds.

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The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) recommends a maximum CO<sub>2</sub> level of 1,000 ppm for indoor building occupants. Studies have indicated that levels between 1,500 – 3,000 ppm can have significant health effects on building occupants. Since children have developing respiratory systems, the potential health effects from elevated levels are a target item of concern.

### Carbon Monoxide (CO)

According to the USEPA, carbon monoxide is a colorless, practically odorless gas or liquid with the potential to be fatal at high concentrations. At low concentration, carbon monoxide can cause fatigue in healthy people and chest pains for people with heart disease. At elevated concentrations, impaired vision, and coordination; headaches; dizziness; confusion; and nausea. The health effects for children can be even more serious. Average levels for the residential setting is between 0 and 5 parts per million (ppm). Levels over 5 ppm are a benchmark for concern within the school setting.

### Temperature / Relative Humidity – Thermal Comfort

A number of variables interact to determine whether people are comfortable with the temperature and relative humidity of the indoor air. The amount of clothing, activity level, age and physiology of people in schools vary widely so the thermal comfort requirements vary for each individual. The American Society of Heating, Refrigerating, and Air-Conditioning Engineers (ASHRAE) Standard 55-1992, describes the temperature and humidity ranges that are comfortable for 80% of people engaged in largely sedentary activities. That information is summarized in the chart below. The ASHRAE Standard assumes “normal” indoor clothing, added layers of clothing reduce the rate of heat loss.

#### **Recommended Ranges of Temperature and Relative Humidity**

<b>Relative Humidity</b>	<b>Winter Temperature</b>	<b>Summer Temperature</b>
30%	68.5°F-75.5°F	74.0°F-80.0°F
40%	68.0°F-75.0°F	73.5°F-80.0°F
50%	68.0°F-74.5°F	73.0°F-79.0°F
60%	67.5°F-74.0°F	73.0°F-78.5°F

*Source:* Adopted from ASHRAE Standard 55-1992, Thermal Environmental Conditions for Human Occupancy.

Humidity is a factor in thermal comfort. Raising relative humidity reduces a person’s ability to lose heat through perspiration and evaporation, so that the effect is similar to raising the temperature. Humidity extremes can also create other IAQ problems. Excessively high or low relative humidities can promote the growth of mold and mildew, and low relative humidities can accelerate the release of spores into the air.

### **IAQ Meter Readings**



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## **Temperature**

Testing throughout the facility indicates temperature levels ranging from 68.5°F-75.5°F at the time of the site visit and sampling. The majority of temperature levels reported suggest acceptable ranges of temperatures within the building in comparison to the ASHRAE standards for the time of the year. Continue monitoring these parameters to determine the appropriate thermal conditions are being achieved for the occupant population. Individual occupants comfort levels may vary but overall, the majority of occupants should be acceptable.

## **Ventilation**

All schools need ventilation, which is the process of supplying outdoor air to occupied areas within the school. As outdoor air is drawn into the school, indoor air is exhausted by fans or allowed to escape through openings, thus removing indoor air pollutants such as restrooms, kitchens, science-storage closets, and fume hoods.

The amount of outdoor air considered adequate for proper ventilation has varied substantially over time. Because updating building codes often takes years, the building code, if any, that was in force when the school HVAC system was designed, may well have required a lower amount of ventilation than what is currently considered adequate. ASHRAE ventilation standards are used as the basis for most building ventilation codes. Below is a table of outdoor air quantities in schools as recommended by ASHRAE Standard 62-1989, *Ventilation for Acceptable Indoor Air Quality*. Please note that this is a limited portion of the Standard and that the quantities listed are in units of CFM/person, which is cubic feet per minute of outdoor air for each person in the area served by that ventilation system.

### **Recommended Minimum Levels for Outdoor Air Ventilation**

<b>Functional Space</b>	<b>CFM per Person</b>
Classroom	15
Music Room	15
Library	15
Auditorium	15
Spectator Sport Area	15
Playing Floors	20
Office Space	20
Conference Room	20
Smoking Lounges	60
Cafeteria	20
Kitchen	15

*Source: Adopted from ASHRAE Standard 62-1989, Ventilation for Acceptable Indoor Air Quality*

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## SECTION 3

### CONCLUSIONS / RECOMMENDATIONS

Based on the site investigation and testing, J.S. Held has detected no major indoor air quality problems at the facility. Testing of ambient indoor air for environmental parameters such as temperature and carbon monoxide have indicated levels within compliance of generally accepted guidelines for most of building occupants. Carbon Dioxide readings within the numerous areas of the building were reported elevated compared to generally acceptable guidelines for the interior of the building. The maintenance program will allow for a more comprehensive picture of indoor air quality as time goes on.

During the site visit and completion of the Tools for Schools Checklists, J.S. Held personnel identified several small items for consideration. These items include:

- Mitigation of carbon dioxide levels that were reported above 1,000 ppm. J.S. Held recommends contacting a trained HVAC professional to determine if the HVAC systems are operating properly in these areas and if enough fresh air is being introduced as required. The carbon dioxide levels should be kept under 1,000 ppm. Numerous areas throughout the building had elevated carbon dioxide levels that need to be addressed. The elevated levels of carbon dioxide within the building may be due to lack of proper air flow in these areas or more occupancy within these areas than the air flow was designed to allow. If the systems are not operating properly and/or they are not properly sized for the occupant locations correct these deficiencies immediately. If the systems are working properly and are properly sized, more fresh air may need to be introduced into these areas to lower the levels.
- J.S. Held recommends regular maintenance, cleaning, and filter change activities for the HVAC systems throughout the campus in accordance with ASHRAE Standards and the manufacturer's recommendations at a minimum. Manufacturers vary on recommending frequency of filter changes.
- Investigate the need for local exhaust fans within the listed areas to properly remove the odors, moisture, and other indoor air contaminants from these areas as necessary.
- J.S. Held recommends that the local exhaust fan systems that have visible signs of dust and debris on the vents/grills be thoroughly cleaned and be placed into the routine maintenance program. J.S. recommends regular maintenance activities on the exhaust systems to ensure proper operations and cleanliness.
- The water intrusion points in the affected areas must be eliminated. Potential water intrusion or moisture sources observed include roofing leaks, condensation/leaking pipes, caulking issues, window system issues and drainage issues. Maintenance activities should be monitored within the building to prevent further moisture damage or water intrusion into the building.

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- Drying, cleaning and/or replacement of water-stained ceiling tiles identified in Section 2.2 of this Report. If water leaks are identified during the maintenance process, maintaining these leaks is strongly recommended.
  - J.S. Held recommends the district implement a Hazard Communication program for the employees regarding the utilization and storage of chemicals within the building and train specific employees on these chemicals, the SDS sheets for these chemicals, proper storage and access to these chemicals.
  - J.S. Held recommends monitoring the plants, watering of plants, food storage, coffee makers, microwaves, mini-fridges, candles, etc. that may produce unnecessary odors or contaminants that may be offensive or cause reactions in some personnel. These items along with others such as cleaning supplies, air fresheners, etc. can contribute to indoor air quality complaints and concerns.
  - Monitor food items, microwaves, refrigerators, and storage of such items to help reduce odors and potential pest problems within the school building. Food odors may be unpleasant and cause reactions to the odor from some of the building occupants as well as attract unwanted pests into the building. The staff should be responsible for ensuring food and packaging is stored and cleaned up properly after each use.

APPENDIX A  
Tools for Schools Checklist Forms



## Administrative Staff Checklist

### Drain Traps

- Drain Traps Are Filled Regularly  
 Need Help Filling Drain Traps Regularly

### Excess Moisture

- No Condensate  
 Excess Condensate Found

### Thermal Comfort

- Room Typically Comfortable  
 Need Help, Room Frequently Uncomfortable

### Local Exhaust Fans

- No Major Pollutant Generating Activities  
 Have Local Exhaust Fan(s)  
 Need Local Exhaust Fan(s)  
 Local Exhaust Fans Function  
 Need Help Evaluating Or Fixing Fan(s)  
 Fans Are Used Properly  
 Fans Are Not Used Properly

### Ventilation

- Located The Unit Ventilator
- Located Air Supply
- Windows Are Operable
- Need Help Determining Type Of Ventilation
- No Problem, Air Is Flowing Without Obstruction
- No Supply Air Or Need Help Removing Obstruction
- No Exhaust Air Or Need Help Removing Obstruction

### Printing/Duplicating Equipment

- Equipment Functions Properly
- Need Help Determining Whether Equipment Functions Properly
- Equipment Is Located In Well Ventilated Area Or Separate Room With Appropriate Local Exhaust
- Need Help Moving Equipment Or Minimizing Exposure

### **Teacher's Classroom Checklist**

#### General Cleanliness

- | Y                                   | N                        |   |
|-------------------------------------|--------------------------|---|
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Classroom is Clean  |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Classroom is Dusted and Vacuumed Thoroughly and Regularly   |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Trash is Removed Daily                                      |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Food is Not Kept in Classroom Overnight                     |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Animal Food, if any, is Stored in Tightly Sealed Containers |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Room is Free of Pests                                       |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Spills Cleaned  |
| <input type="checkbox"/>            | <input type="checkbox"/> | Need Help With Cleaning Or Pest Control                     |

### Animals In The Classroom

- Y    N  
 \_\_\_ \_\_\_ Exposure to Animal Allergens Minimized  
 \_\_\_ \_\_\_ Animals Kept in Cages as Much as Possible; Not Allowed to Roam  
 \_\_\_ \_\_\_ Cages Cleaned Regularly  
 \_\_\_ \_\_\_ Animals Located Away From Ventilation System Vents to Avoid  
Circulating Allergens Throughout the Room or Building  
 \_\_\_ \_\_\_ Alternatives to Animals Used when Possible  
\_\_\_\_\_ Need Help Minimizing Exposure To Animal Allergens

- Y    N  
 \_\_\_ \_\_\_ School Nurse Consulted About Student Allergies or Sensitivities (Privacy  
Laws May Limit the Information that Health Officials Can Disclose)  
 \_\_\_ \_\_\_ Parents Asked About Potentials Allergies in a Note that Students Take  
Home, or During Parent Teacher Conferences  
 \_\_\_ \_\_\_ Check for Allergies When New Students Enter the Class  
 \_\_\_ \_\_\_ Sensitive Students Located Away from Animals and Habitats  
\_\_\_\_\_ Need Help Determining If Students Have Allergies

### Drain Traps In The Classroom

- Y    N  
 \_\_\_ \_\_\_ Drain Traps Filled Regularly  
 \_\_\_ \_\_\_ Water Poured Down Floor Drains Once Per Week (Approx. 1 Quart of  
Water)  
 \_\_\_ \_\_\_ Water Run in Sinks at Least Once Per Week (About 2 Cups of Water)  
 \_\_\_ \_\_\_ If Not Regularly Used, Toilets Flushed Once Each Week  
\_\_\_\_\_ Need Help Filling Dry Drain Traps Regularly

### Excess Moisture In Classrooms

- Y    N  
 \_\_\_ \_\_\_ Windows, Window Sills, and Window Frames Free of Condensate  
 \_\_\_ \_\_\_ Cold Water Pipes Free of Condensate  
 \_\_\_ \_\_\_ Indoor Surfaces of Exterior Walls Free of Condensate  
\_\_\_\_\_ Excess Condensate Found

Y N

\_\_\_

Area Around and Under Classroom Sinks Free of Leaks

\_\_\_

Classroom Lavatories Free of Leaks

\_\_\_

Ceiling Tiles or Walls Leak-free (Discoloration May Indicate Periodic Leaks)

\_\_\_\_\_

Found Leaks Or Signs Of Moisture

### Thermal Comfort

Y N

\_\_\_

Temperature (Generally 72°F-76°F)

\_\_\_

No Signs of Draftiness

\_\_\_

No Direct Sunlight Shining on Students

\_\_\_  \_\_\_

Humidity is Acceptable. (Typically, Too High if Higher Than 60% Relative Humidity [RH]-or Too Low if Lower Than 30% Relative Humidity)

\_\_\_

Room Usually Comfortable

\_\_\_\_\_

Need Help, Room Frequently Uncomfortable

### Ventilation

Y N

\_\_\_

Unit Ventilator Located

\_\_\_

Air Supply and Return Vents Located

\_\_\_

Windows are Operable

\_\_\_\_\_

Need Help Determining Type Of Ventilation

Y N

\_\_\_

Air is Flowing From Air Supply

\_\_\_\_\_

Need Help, Supply Air Is Not Flowing

\_\_\_\_\_

Need Help, Exhaust Air Is Not Flowing

Y N

\_\_\_

No Smell of Vehicle Exhaust

\_\_\_

No Smell of Kitchen/Food

\_\_\_

No Smell of "Chemicals"

\_\_\_

No Smell of Mold or Mildew

\_\_\_ \_\_\_

Found Source of Odors and Corrected Problem

\_\_\_\_\_ Need Help, Sometimes Smell Unexplained Or Unpleasant Odors In Classroom

Kitchen and Science Room Fume Hoods

Y N  
X \_\_\_\_\_ No Major Pollutant Generating Activities  
X \_\_\_\_\_ Have Fume Hood and/or Exhaust Fan

\_\_\_\_\_ Need Fume Hood And/Or Local Exhaust Fan

Y N  
X \_\_\_\_\_ Fume Hoods are in Good Repair; Not Cracked, Broken, or Pulling Away From the Ceiling or Wall  
X \_\_\_\_\_ Fan is Operated. (Note if Fans are Not Operated Due to Noise.)  
X \_\_\_\_\_ Adjacent Room or Halls Odor Free

\_\_\_\_\_ Need Help, Hood Or Exhaust Fan Does Not Appear To Function Properly

Art Supplies

Y N  
X \_\_\_\_\_ Supplies Okay

\_\_\_\_\_ Need Help Inventorying Supplies, Interpreting Label Warning, Or Determining If Supplies Are Safe

Y N  
X \_\_\_\_\_ Following Good Handling and Storage Practices

\_\_\_\_\_ Need Help Developing Good Safety, Handling, or Storage Practices

Y N  
X \_\_\_\_\_ Exposure Minimized

\_\_\_\_\_ Need Help Minimizing Exposure To Art Supplies

Science Supplies

Y N  
X \_\_\_\_\_ Supplies Reviewed  
X \_\_\_\_\_ MSDS on Hand

\_\_\_\_\_ Need Help Determining Impacts Of Supplies

Y    N

\_\_\_

Spill Procedures in Place

\_\_\_

All Chemicals Labeled Accurately With Date of Receipt/Preparation and Pertinent Precautionary Information

\_\_\_

Supplies Stored According to Manufacturers' Recommendations

\_\_\_

Recommended Procedures for Disposal of Used Substances Understood and Followed

\_\_\_

Compressed Gas Cylinders Secured

\_\_\_

Storage Areas Separate From Main Classroom Area and Ventilated Separately

\_\_\_\_\_

Need Help With Good Safety, Handling, Or Storage Practices

Y    N

\_\_\_

Techniques That Require the Least Quantity of Hazardous Materials Used

\_\_\_

Fume Hoods Capture Respirable Particles, Gases, and Vapors Released Within Them

\_\_\_

Exhaust Fans Operate

\_\_\_\_\_

Need Help Minimizing Exposure To Supplies

### Industrial And Vocational Education Supplies

Y    N

\_\_\_

Supplies Reviewed

\_\_\_

MSDS on Hand

\_\_\_\_\_

Need Help Determining Impacts Of Industrial/Vocational Supplies

Y    N

\_\_\_

Spill Procedures in Place

\_\_\_

Supplies Stored According to Manufactures' Recommendations

\_\_\_

Recommended Procedures for Disposal of Used Substances Understood and Followed

\_\_\_

Storage Areas Separate From Main Classroom Area and Ventilated Separately

\_\_\_\_\_

Need Help With Good Safety, Handling, Or Storage Practices

Y N

\_\_\_

Instructional Techniques that Require the Least Quantity of Materials Used

\_\_\_

Fume Hoods Capture Respirable Particles, Gases, and Vapors Released Within Them

\_\_\_

Exhaust Fans Operate

\_\_\_\_\_

Need Help Minimizing Exposure To Supplies

### Locker Room

Y N

\_\_\_

Locker Room and Showers Cleaned Regularly and Properly

\_\_\_\_\_

Need Help To Have Showers And Locker Room Cleaned Regularly And Properly

Y N

\_\_\_

Soiled Clothes and Towels are Removed Regularly

\_\_\_\_\_

Need Help To Have Soiled Clothes Or Towels Removed Regularly

APPENDIX B  
Facility Diagrams / IAQ Meter Results



IAQ Readings	School Name	West Leyden High School			Page 1
Room Description	CO2	CO	Temp	Humidity	
151-3	413	0	72.2	64%	
151-2	512	0	72.6	64%	
150-2	450	0	73.8	62%	
150	448	0	72.8	62%	
152	689	0	72.5	61%	
154	428	0	72.7	61%	
154-1	487	0	72.3	61%	
M-150	437	0	72.5	62%	
156	468	0	72.5	63%	
155	815	0	71.9	63%	
153	521	0	71.8	62%	
151-1	478	0	71.5	62%	
151-2	419	0	71.4	64%	
151	451	0	71.7	64%	
140-2	434	0	71.9	64%	
140-1	458	0	71.8	63%	
140-4	500	0	74.4	62%	
140	460	0	70.4	60%	
142	466	0	70.5	61%	
142-1	472	0	70.3	61%	
144	454	0	68.4	63%	
M-140	426	0	69.3	62%	
145	477	0	68.7	67%	
143	465	0	68.1	67%	
141	557	0	68.6	67%	

IAQ Readings	School Name	West Leyden High School			Page 2
Room Description	CO2	CO	Temp	Humidity	
135	457	0	70.7	69%	
134	463	0	71.3	62%	
132-11	524	0	71.3	62%	
132-10	475	0	71.4	61%	
132-9	514	0	71.5	61%	
132-8	492	0	71.3	62%	
133	425	0	71.4	61%	
132-5	417	0	71.4	63%	
132-4	462	0	71.5	63%	
132-7	507	0	71.5	62%	
132-6	429	0	71.7	62%	
132 Kitchen	408	0	71.8	63%	
131	479	0	71.9	61%	
130 Cafeteria	450	0	71.2	61%	
126 Student Cafe	415	0	71.4	58%	
125	655	0	72.1	59%	
125-1	448	0	72.1	57%	
121	436	0	72.5	60%	
124	461	0	72.9	60%	
123	453	0	73.0	60%	
122	448	0	71.9	59%	
111-3	419	0	73.4	62%	
110	468	0	73.1	61%	
112	611	0	73.1	61%	
116	436	0	73.0	61%	

IAQ Readings	School Name	West Leyden High School			Page 3
Room Description	CO2	CO	Temp	Humidity	
113	427	0	72.6	60%	
111	455	0	72.9	62%	
111-3	508	0	72.5	63%	
111-1	493	0	72.4	64%	
110-2	511	0	71.9	63%	
110-1	543	0	71.6	62%	
101-4	502	0	71.2	62%	
100	579	0	70.4	62%	
102	402	0	70.9	64%	
104	409	0	70.9	65%	
104-1	461	0	70.8	64%	
106	519	0	70.6	65%	
106-1	487	0	70.4	62%	
107	405	0	70.2	61%	
107-1	684	0	70.3	66%	
107-2	420	0	70.2	65%	
107-3	400	0	70.1	65%	
109	449	0	70.1	64%	
105	462	0	70.3	64%	
	482	0	71.0	63%	
101-3	503	0	71.6	63%	
101	426	0	70.3	65%	
101-1	388	0	70.0	65%	
101-2	412	0	71.8	63%	
100-2	437	0	71.6	62%	

IAQ Readings	School Name	West Leyden High School			Page 4
Room Description	CO2	CO	Temp	Humidity	
100-1	482	0	71.5	60%	
T012	527	0	71.5	62%	
251-3	487	0	71.6	47%	
251-2	527	0	71.4	47%	
250-A	548	0	71.3	46%	
250-B	510	0	71.4	48%	
252	535	0	71.8	48%	
254	538	0	72.0	47%	
M-250	524	0	71.9	47%	
257	518	0	71.8	47%	
255	527	0	72.1	47%	
253	510	0	71.5	46%	
251	554	0	70.0	46%	
250-3	458	0	71.9	50%	
241-3	473	0	70.6	47%	
241-2	570	0	71.2	48%	
240	552	0	71.8	48%	
242	582	0	70.7	53%	
244	563	0	70.6	50%	
246	623	0	69.8	52%	
247	586	0	70.2	50%	
247-1	683	0	70.3	54%	
245	852	0	69.5	56%	
243	623	0	69.9	46%	
241	583	0	70.7	53%	

IAQ Readings	School Name	West Leyden High School			Page 5
Room Description		CO2	CO	Temp	Humidity
241-1		760	0	70.5	48%
240-2		619	0	70.6	49%
231-1		443	0	73.0	47%
232/234		457	0	74.3	45%
236/238		390	0	73.8	44%
M-230		488	0	73.0	47%
237		492	0	72.8	45%
235		470	0	74.5	43%
233		405	0	74.5	43%
231		435	0	74.3	45%
232-3		421	0	74.4	44%
232-1		452	0	74.4	44%
232-2		489	0	74.2	44%
230		485	0	74.8	45%
230-4		510	0	75.3	42%
230-5		507	0	75.4	42%
230-1		509	0	75.4	42%
230-2		508	0	75.3	42%
230-3		551	0	75.5	43%
229		541	0	75.0	42%
228		643	0	74.4	43%
227		726	0	73.4	42%
226		584	0	73.7	43%
225		653	0	74.3	43%
224		570	0	75.0	43%

IAQ Readings	School Name	West Leyden High School			Page 6
Room Description		CO2	CO	Temp	Humidity
223		568	0	74.0	44%
223-1		578	0	73.8	45%
223-3		616	0	74.3	45%
223-5		605	0	73.7	44%
223-7		583	0	73.1	44%
223-9		583	0	73.0	45%
223-11		660	0	72.8	47%
223-13		688	0	72.2	46%
223-15		621	0	71.9	48%
223-14		586	0	71.1	47%
223-12		648	0	71.7	49%
223-10		615	0	72.2	47%
223-8		635	0	72.1	47%
223-6		617	0	72.2	47%
223-4		608	0	72.0	47%
223-2		595	0	71.7	48%
IT-220		435	0	71.8	40%
221-3		527	0	72.0	45%
221-4		550	0	72.4	47%
222		696	0	72.4	47%
222-1		597	0	72.6	48%
222-2		677	0	72.5	47%
222-4		575	0	72.3	49%
222-5		540	0	72.1	49%
222-6		550	0	72.1	49%

IAQ Readings	School Name	West Leyden High School			Page 7
Room Description	CO2	CO	Temp	Humidity	
222-9	574	0	71.3	47%	
222-7	566	0	71.8	48%	
222-8	684	0	72.2	51%	
222-10	624	0	72.3	49%	
M-220	581	0	72.0	48%	
221	559	0	72.2	48%	
220	611	0	70.9	48%	
220-1	495	0	72.6	48%	
211-3	567	0	73.1	48%	
210	760	0	71.8	48%	
		0			
212	511	0	71.5	50%	
214	564	0	71.3	50%	
		0			
216	510	0	71.8	51%	
217	401	0	71.1	49%	
		0			
215	526	0	72.2	48%	
213	465	0	68.5	49%	
		0			
211	511	0	71.1	51%	
210-3	482	0	71.3	50%	
210-2	517	0	71.4	48%	
201	446	0	72.4	50%	
200	1421	0	73.2	49%	

IAQ Readings	School Name	West Leyden High School			Page 8
Room Description	CO2	CO	Temp	Humidity	
202	2268	0	73.3	51%	
204	752	0	72.0	50%	
206	489	0	71.7	47%	
209	470	0	71.5	50%	
207	460	0	71.6	45%	
205	494	0	71.8	52%	
203-4	530	0	71.8	48%	
203-5	467	0	71.7	48%	
203	473	0	71.5	47%	
200-2	435	0	71.4	47%	
200-3	418	0	71.5	46%	
261-4	432	0	71.8	47%	
Basement Tunnels - Piping	594	0	71.1	51%	
60-7	506	0	71.4	62%	
89	473	0	71.2	62%	
88	492	0	71.0	63%	
88-1	518	0	70.4	63%	
87-1	527	0	70.4	62%	
Boiler House Restroom	521	0	70.2	65%	
60	475	0	70.1	67%	
60-2	482	0	70.2	66%	
60-1	492	0	70.3	67%	
62-2	471	0	70.3	67%	
62-3	489	0	70.2	66%	
62	622	0	71.1	71%	



IAQ Readings	School Name	West Leyden High School			Page 9
Room Description	CO2	CO	Temp	Humidity	
64	564	0	70.7	72%	
66	633	0	70.3	60%	
80-3	400	0	68.4	71%	
80-2	418	0	68.6	71%	
80-1	413	0	68.8	71%	
80-7	419	0	68.8	71%	
80-7 Restroom	419	0	69.0	71%	
80-6	455	0	68.0	71%	
80-5	395	0	68.5	71%	
75	530	0	69.9	64%	
75-1	533	0	70.4	65%	
75-2	563	0	70.1	65%	
75-3	535	0	70.1	66%	
75-4	654	0	70.0	64%	
73-4	602	0	71.1	63%	
73-3	592	0	70.8	62%	
73-2	589	0	71.1	61%	
75-6	598	0	71.3	64%	
75-7	543	0	71.1	63%	
73	525	0	71.4	64%	
70-7	503	0	71.6	63%	
70-6	483	0	71.2	61%	
70	534	0	71.3	63%	
69	490	0	70.6	67%	
67	460	0	70.7	66%	

IAQ Readings	School Name	West Leyden High School			Page 10
Room Description	CO2	CO	Temp	Humidity	
67-1	480	0	70.7	67%	
67-2	466	0	70.2	66%	
65-2	451	0	70.4	65%	
65-3	438	0	70.6	64%	
65	476	0	70.8	67%	
63-2	740	0	71.0	65%	
63-1	474	0	72.0	65%	
61	665	0	71.0	70%	
61-1	761	0	72.5	70%	
61-2	637	0	71.8	67%	
C-80-1 Hall	432	0	70.9	65%	
82	509	0	70.7	66%	
82-1	441	0	71.4	66%	
82-2	436	0	71.4	66%	
84	430	0	70.8	66%	
84-1	583	0	70.7	63%	
84-2	611	0	71.1	67%	
87	681	0	72.3	66%	
87-1	565	0	72.0	66%	
87-2	597	0	71.8	66%	
89	591	0	72.5	66%	
85-1	690	0	72.8	61%	
85-2	511	0	72.3	63%	
85	457	0	72.0	65%	
85-3	482	0	72.5	65%	

IAQ Readings	School Name	27			
Room Description	CO2	CO	Temp	Humidity	
91	584	0	71.9	67%	
93	615	0	71.8	66%	
96	590	0	73.2	67%	
96-1	529	0	72.8	66%	
94	572	0	71.7	65%	
92	483	0	71.9	67%	
90 Gym	652	0	71.6	68%	
90-1	540	0	71.4	67%	
Concessions	462	0	72.1	65%	
83	513	0	72.9	74%	
83-1	480	0	73.8	68%	
83-2	573	0	73.6	64%	
83-3	418	0	73.6	65%	
81	486	0	70.0	70%	
81-3	512	0	71.3	66%	
81-5	567	0	71.0	64%	
81-4	489	0	70.8	63%	
81-2	523	0	70.4	62%	
E1	504	0	70.6	64%	
79	614	0	70.5	61%	
77	576	0	71.0	63%	
70-8	519	0	71.8	64%	
78	689	0	70.5	64%	
78-1	655	0	69.9	64%	
78-2	971	0	69.0	66%	

IAQ Readings	School Name			
Room Description				
74	538	0	69.9	68%
76	528	0	68.6	67%
74-1	540	0	70.2	65%
74-2	631	0	70.1	67%
74-3	484	0	69.7	68%
74-4	700	0	69.8	68%
74-5	684	0	70.3	65%
74-6	650	0	70.3	66%
172-1	572	0	70.6	65%
172-2	548	0	70.5	63%
172	537	0	70.8	63%
169	474	0	71.0	64%
169-1	550	0	72.3	66%
169-2	471	0	71.5	65%
169-3	425	0	71.2	65%
169-4	413	0	70.7	63%
169-5	432	0	71.4	62%
169-6	562	0	71.6	63%
169-7	648	0	71.9	63%
169-8	595	0	71.6	65%
169-9	519	0	71.4	65%
169-10	527	0	71.3	64%
165	409	0	71.6	63%
163	392	0	70.9	63%
161	416	0	71.2	64%

IAQ Readings	School Name			
Room Description				
161-2	417	0	72.0	62%
161-5	750	0	72.2	63%
160-1	463	0	70.8	64%
160	469	0	70.8	64%
162	598	0	71.1	63%
164	483	0	71.0	63%
166	432	0	71.1	64%
166-1	460	0	71.0	63%
166-2	412	0	71.2	63%
166-3	410	0	71.1	63%
166-4	436	0	71.0	63%
168	469	0	71.1	65%
168-2	437	0	71.0	64%
168-3	437	0	70.6	64%
168-4	467	0	70.9	63%
168-5	411	0	70.8	64%
168-6	427	0	71.0	63%
168-14	570	0	71.5	65%
170	482	0	71.0	65%
171	411	0	72.2	63%
173	493	0	72.4	63%
174 Auditorium	440	0	71.5	61%
175	486	0	73.6	62%
175-1	473	0	73.6	62%
175-2	495	0	73.7	63%

IAQ Readings	School Name			
Room Description				
175-5	575	0	73.5	62%
175-6	579	0	73.4	64%
175-7	474	0	72.9	62%
178	435	0	72.8	60%
177-7	476	0	72.4	61%
177	471	0	72.6	61%
177 -2	463	0	72.1	62%
177 -1	428	0	72.5	62%
177 - Back Office	479	0	72.4	63%
275-2	551	0	71.2	48%
272-4	512	0	71.2	47%
272-5	532	0	71.3	47%
275	458	0	71.4	48%
273	463	0	71.5	48%
272-2	514	0	72.2	47%
272	545	0	72.1	49%
272-3	516	0	72.3	48%
270	483	0	71.7	46%
271	459	0	71.4	47%
269	509	0	71.0	47%
266/268	521	0	71.8	48%
268-1	525	0	71.5	47%
267	594	0	72.0	50%
264	552	0	71.5	49%
265	736	0	70.5	48%

IAQ Readings	School Name			
Room Description				
263	594	0	70.2	49%
262	550	0	70.2	50%
261	551	0	69.5	49%
260	556	0	69.6	49%
261-2	580	0	71.0	47%
181	483	0	71.2	49%
283-3	497	0	71.4	51%
283	527	0	71.5	50%
283-2	523	0	72.0	50%
283-1	548	0	71.8	49%
283-4	609	0	71.5	48%
185	574	0	71.4	48%
185-1	528	0	71.2	47%
185-2	569	0	71.2	47%
175-3	492	0	70.8	47%
175-4	538	0	70.9	48%
Fitness Room Mechanical Room 089-3	436	0	71.0	48%
86 Bus Barn	485	0	72.4	47%
86-1	537	0	72.5	47%
<b>Outside 4/30/24</b>	227	0	74.7	61%

APPENDIX C  
Professional Credentials



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## Key Expertise

- Indoor Air Quality (IAQ) Assessments
- Air Monitoring
- Asbestos Building Inspections
- Asbestos Record Keeping
- Lead RRP Removal
- OSHA Safety
- Microscopic Reading
- Water Sampling

## Summary of Experience

Harper Burkeen specializes in environmental sciences and industrial hygiene; he has been on multiple oversight jobs at large entities and the St. Louis School District. These oversights consist of asbestos and lead removal. Mr. Burkeen has also assisted in numerous asbestos building inspections, water sampling, and indoor air quality (IAQ) assessments.

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## Professional Affiliations/Memberships/Licenses/Training

Asbestos Air Sampling Technician  
USEPA Lead Renovator, Repair and Painting Certification  
Asbestos Contractor/Supervisor Training  
State of Missouri Accredited Asbestos Worker  
OSHA 10-Hour General Industry  
Asbestos Building Inspector Training  
NIOSH 582E Sampling and Evaluating Airborne Asbestos Dust

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## Role at J.S. Held

Harper Burkeen is involved in onsite project monitoring, air-sampling, lead removal projects, indoor air quality assessments, and asbestos building inspections. He provides efficient project record keeping and provides vital information on all EH&S projects such as lead abatement and asbestos abatement.

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## Education

BS, Environmental Studies, minor in Business Administration, McKendree University, 2023

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## Project Geographical Experience

U.S.

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## Languages

English

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## Contact

6 Meadow Heights Professional Park, Collinsville, IL 62234 | +1 618-357-4676 (O) | harper.burkeen@jsheld.com

## Work Experience

J.S. Held, LLC  
Industrial Technician/Environmental Technician/Safety Technician  
2023 – Present

Environmental Consultants, LLC (acquired by J.S. Held, LLC)  
Project Coordinator  
2023 – 2023

ACS (Acoustical Ceiling Specialist)  
Apprentice Carpenter  
2021 – 2022

Major League Fishing  
High School/College Assistant in Operations (Intern)  
2018 – 2019

## Select Project Experience

**Hurricane Ian Relief and Recovery Efforts, Sanibel Island, Florida & Fort Meyers Beach, Florida.** Environmental Inspector/Scientist, worked with the 2022 Disaster and Recovery teams in response to the damage caused by Hurricane Ian. Conducted hazardous building material inspections and assessments specifically to identify asbestos, lead-based paint, and other regulated hazardous materials. Additional duties included the conducting of moisture mapping assessments, mold testing, and other biological contaminants on Sanibel Island and Fort Meyers Beach. The scope of work included servicing over forty (40) large commercial properties encompassing greater than 1,000,000 SF of damaged properties.

**Lewis and Clark School, Wood River, Illinois.** Environmental Inspector/Health and Safety Officer, following a devastating fire that severely damaged the entire school, performed daily air monitoring and readings throughout the entire school, helped perform sampling for both microbial growth and fire, soot, and ash remnants/particulates. Supervised and monitored the nightly duct cleaning activities throughout the entire school, ensured workers safety during the cleaning and that the ducts were adequately clean once they were finished. Performed routine walks for fire watch because the school had no working fire alarm systems while work was being performed on the building.

**Sunrise Apartment Renovations, Kansas City, Kansas.** Environmental Project Manager, performed sampling for hazardous materials on a massive thirteen (13) story apartment complex. Sampling included daily monitoring and reading of asbestos samples, then as each floor was completed with asbestos abatement would then monitor and sample for microbial growth. This included the sampling of both sport traps and tape lifts, using both to check for maximum results. Other duties included reporting the additional amount of drywall that needed to be removed over the original scope of work, sampling for additional materials that may be considered hazardous, inspecting all containments build, and inspecting for more additional drywall that is contaminated with microbial growth and needed to be removed.

**Adorers of the Blood of Christ Convent, Ruma, Illinois.** Environmental Project Manager/Inspector and Health and Safety Officer, bulk sampling performed at the beginning of the project to test for any hazardous materials that may be inside of the building during the demolition process. The convent suffered major water damage after a water pipe in the ceiling ruptured due to extreme cold. While the demo process was ongoing inspections were performed for any additional areas that were infected with microbial growth that needed removal. Monitored worker safety and took daily temperatures and a questionnaire on the workers for the Covid-19 virus.

**St. Louis Public Schools, St. Louis, Missouri.** Environmental Project Manager/Inspector, sampling performed during this time to check for microbials and indoor air quality readings. Perform indoor air quality studies for the St. Louis Public School buildings throughout the district. HVAC samples and lead samples taken inside many of the schools for upcoming HVAC cleaning work. Assisted in taking air samples for lead cleaning/abatement.

## Harper Burkeen

Industrial Technician/Environmental Technician/Safety Technician, EH&S

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**St. Clair County, Illinois.** Environmental Project Manager, performed a variety of hazardous material sampling including asbestos and microbial growth. Performed indoor air quality with many of the different schools, making sure the HVAC systems were working properly to ensure the air quality of the students and faculty at the schools.

**Hawthorne Apartment Renovations, Kansas City, Missouri.** Environmental Project Manager, performed sampling for hazardous materials, including asbestos and microbial growth. Also monitored the building of containments and the work being performed for each unit being done. The containments we have built have been anything from an entire unit full size containment with a full ceiling removal to as small as glove bags inside of the bathrooms.

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**Key Expertise**

- Indoor Air Quality (IAQ) Assessments
- Air Monitoring
- Asbestos Building Inspections
- Asbestos Air Sample Readings

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**Education**

BS, Environmental Studies, McKendree University, 2023

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**Project Geographical Experience**

U.S.

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**Languages**

English

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**Summary of Experience**

Devon Rathbun specializes in asbestos, lead, and mold related issues. Mr. Rathbun assists in the completion of numerous projects that include, inspections and oversight within the asbestos, lead-based paint, and indoor air quality projects.

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**Professional Affiliations/Memberships/Licenses/Training**

Asbestos Air Sampling Technician  
Asbestos Building Inspector  
Asbestos Contractor/Supervisor Training  
USEPA Lead Renovator  
State of Missouri Accredited Asbestos Worker  
OSHA 10 Hour General Industry  
NIOSH 582 Certified

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**Role at J.S. Held**

Devon Rathbun is involved in inspecting, project management, and onsite project monitoring. He has extensive involvement in numerous asbestos abatement assignments throughout the United States and has consulted on large asbestos removal and inspection projects.

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**Contact**

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| devon.rathbun@jsheld.com

## Devon Rathbun

Industrial Technician/Environmental Technician/Safety Technician, EH&S

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### Work Experience

J.S. Held, LLC

Industrial Technician/Environmental Technician/Safety Technician

2023 – Present

Environmental Consultants, LLC (acquired by J.S. Held, LLC)

Project Coordinator

2023 – 2023

Horizon West Guides and Outfitters, Sitka, AK

Deckhand

2019 – 2022